

Eureka Math *A Story of Units*

Fifth Grade – Module 5

2015-2016

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Assessment based on Version 3. (No changes from Version 2.)



Module Assessment Overview

Purpose of Assessments

Mid-Module Assessment: These tasks address approximately the **first half** of the module's learning objectives, and provide important information for instruction and for grading.

End-of-Module Assessment: These tasks are based on all standards addressed in order to gauge students' full range of understanding of the **module as a whole**. The End-of-Module assessment should carry more weight than the Mid-Module Assessment in terms of student grades in the appropriate domain.

Administration of Assessments

- Mid- and End-of-Module Assessments are designed to be completed in approximately one class period. However, The tests can be given over multiple days as needed.
- Assessments are designed to be completed independently by students, without assistance.
- These tasks should not be preceded by review of similar problems.

Grading Guidance

The grading scale on Elementary Report Cards has been changed for 2015-2016 and beyond. Please note that **4 now indicates advanced understanding of grade level standards expected at this time of year.**

4 – Advanced: Student demonstrates advanced understanding of grade level standards expected at this time of year.

3 – Proficient: Student demonstrates proficiency with grade level standards expected at this time of year.

2 – Basic: Student demonstrates basic understanding of grade level standards expected at this time of year. Student needs additional support and practice.

1 – Below Basic: Student demonstrates minimal understanding of grade level standards expected at this time of year. Student needs significant support and practice.

Rubrics have been updated to reflect this change. Rubrics have been further modified from Eureka Math originals for clarity, accuracy, and alignment to Bethel's grade scale.

General Grading Guidance:

- On the report card, student learning is reported by CCSS domain. The Fifth Grade CCSS domains are: Operations and Algebraic Thinking, Number and Operations in Base Ten, Number and Operations – Fractions, Measurement and Data, and Geometry.
- Grades in each domain should be based on multiple sources of evidence, including the Mid- and End-of-Module Assessments. The End-of-Module assessment should carry more weight than the Mid-Module Assessment in terms of student grades in the appropriate domain.

Module 5 Grading Guidance:

- The standards taught and assessed in Module 5 are only taught and assessed in this module. (See checklist on page 5.)

Note: When working with measurement, it is crucial that students include the correct measurements to differentiate between linear measurements, area, and volume. On many of the items on Module 5 assessments, students cannot earn full credit without correct labels.

Grade 5 Common Core State Standards Checklist by Module

This grade-level chart provides an at-a-glance view of when each standard is addressed. **Shaded boxes indicate standards assessed in Module 5.** Note that standards included in major clusters are followed by an asterisk (*). Please refer to the Curriculum Overview of *A Story of Units* for a curriculum map and detailed grade-level descriptions including a summary of the year, a rationale of the module sequence, and a standards alignment chart.

CCSS		GRADE 5 MODULES					
		1	2	3	4	5	6
5.0A	1		X		X		
	2		X		X		X
	3						X
5.NBT	1*	X	X				
	2*	X	X				
	3a*	X					
	3b*	X					
	4*	X					
	5*		X				
	6*		X				
	7*	X	X		X		
5.NF	1*			X			
	2*			X			
	3*				X		
	4a*				X		
	4b*					X	
	5a*				X		
	5b*				X		
	6*				X		
	7a*				X		
	7b*				X		
	7c*				X		
5.MD	1	X	X		X		
	2				X		
	3a*					X	
	3b*					X	
	4*					X	
	5a*					X	
	5b*					X	
	5c*					X	
5.G	1						X
	2						X
	3					X	
	4					X	

Fifth Grade Module 5: Mid-Module Assessment Task Score Sheet

A Progression of Learning

A Progression of Learning is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left to right. The learning goal for each student is to move to the last step, “Evidence of solid reasoning with a correct answer”. These steps are meant to help teachers and students identify and celebrate what the student CAN do now, and what they need to work on next.

Score Key: A Progression of Learning			
Little or no evidence of reasoning with an incorrect answer. (1 Point)	Evidence of some reasoning with an incorrect answer. (2 Points)	Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	Evidence of solid reasoning with a correct answer. (4 Points)

	Module 5 Mid-Module Assessment								
	Domain				Standards				
Question	Measurement and Data				5.MD.3	5.MD.4	5.MD.5a	5.MD.5b	5.MD.5c
1	1	2	3	4	X	X			
2	1	2	3	4			X	X	
3	1	2	3				X		
4	1	2	3	4			X	X	X
5	1	2	3						X
6	1	2	3	4				X	
7	1	2	3	4	X				

Domain Score	Measurement and Data	
Total Points		
Level	4	25-26 points
	3	18-24 points
	2	11-17 points
	1	7-10 points

Note: For more information about standards assessed in this module, see back of this score sheet.

Notes:

Fifth Grade Module 5: Mid-Module Assessment Task Score Sheet (continued)

Mid-Module Assessment Task (Topics A–B) Clusters and Standards Addressed

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

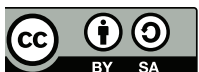
- 5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
 - A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
 - Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
 - Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Fifth Grade Module 5: Mid-Module Assessment Task Rubric

A Progression of Learning				
Assessment Task Item and Standards Assessed	STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)	STEP 2 Evidence of some reasoning with an incorrect answer (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
1 5.MD.3 5.MD.4	The student correctly answers 0-1 of the four parts.	The student correctly answers 2 of the four parts.	The student correctly answers 3 of the four parts.	The student correctly finds and labels the volume for 4 of the four parts. (See below.)
	a. (1) 12 (2) in ³ b. (3) 8 (4) in ³			
2 5.MD.5a 5.MD.5b	The student is unable to answer any parts correctly.	The student correctly answers 1-2 of the three parts.	The student correctly answers parts (1) and (3), and calculates the volume of the prism in part (2) but does NOT use Jack's method.	The student correctly answers 3 of the three parts. (See below.)
	a. (1) Explains the equivalence between the two approaches by explaining the sides may be multiplied in any order because any face can be used as the base of the figure. b. (2) Uses Jack's method to correctly calculate the volume of the prism as $(3 \times 2) \times 5 = 30 \text{ ft}^3$. (3) Labels volume with cubic feet.			
3 5.MD.5a	The student correctly answers 0 of the three parts.	The student correctly answers 1 of the three parts.	The student correctly answers 3 of the three parts. (See below.)	No level 4 available for this item.
	(1) Answers 1,440 (2) Labels volume using cubic cm (cm ³) (3) Explains the reasoning used (words, pictures, or numbers)			
4 5.MD.5	The student correctly answers 0-1 of the four parts.	The student correctly answers 2 of the four parts.	The student correctly answers 3 of the four parts.	The student correctly answers 4 of the four parts. (See below.)
	(1) Draws a three-dimensional rectangular prism as a model. (2) Labels the model, (3) including inches for height and inches squared for the base. (4) Calculates the height of the prism as 14 in.			

Assessment Recommendations for Eureka Math A Story of Units
Teaching and Learning Department - Bethel School District

A Progression of Learning				
Assessment Task Item and Standards Assessed	STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)	STEP 2 Evidence of some reasoning with an incorrect answer (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
5 5.MD.5c	The student correctly answers 0-1 of the three parts.	The student correctly answers 2 of the three parts.	The student correctly answers 3 of the three parts. (See below.)	No level 4 available for this item.
	(1) Calculates the volume of the prism as 4,080. (2) Labels volume using cubic cm (in ³). (3) Explains the reasoning used.			
6 5.MD.5b	The student correctly answers 0-2 of the six parts.	The student correctly answers 3-4 of the six parts.	The student correctly answers 5 of the six parts.	The student correctly answers 6 of the six parts. (See below.)
	a. (1) Calculates 9,000 cm ³ , (2) labels volume with cubic cm, and (3) explains the reasoning used. b. (4) Calculates 18 cm, (5) labels height in cm, and (6) shows correct work/reasoning.			
7 5.MD.3	The student correctly answers 0 of the three parts.	The student correctly answers 1 of the three parts.	The student correctly answers 2 of the three parts. OR The student makes an error reading the scale on the beaker and answers parts 2 and 3 correctly based on the scale error.	The student correctly answers 3 of the three parts. (See below.)
	(1) Clearly explains a method for determining if the contents will fit without pouring—2,400 mL = 2,400 cm ³ . (2) Correctly answers that the broth will not fit. (3) Correctly answers that Juliet will have 300 more mL (or 300 cm ³), or 0.3 L, of broth that won't fit in the storage container.			



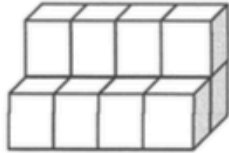
Fifth Grade Module 5: Mid-Module Assessment Task Key

Name Jane

Date _____

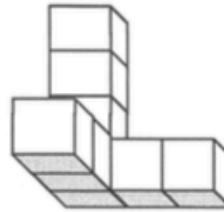
1. Tell the volume of each solid figure made of 1-inch cubes. Specify the correct unit of measure.

a.



12 in³

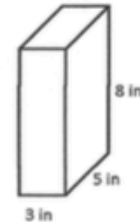
b.



8 in³

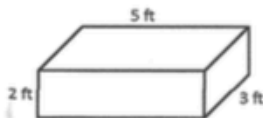
2. Jack found the volume of the prism pictured to the right by multiplying 5×8 and then adding: $40 + 40 + 40 = 120$. He says the volume is 120 cubic inches.

a. Jill says he did it wrong. He should have multiplied the bottom first (3×5) and then multiplied by the height. Explain to Jill why Jack's method works and is equivalent to her method.



Jack thought of it like slices. He figured the area of one slice (8×5). Then he visualized 2 more slices, so he added $40 + 40 + 40$ which is 120. This is the same answer he would have gotten if he multiplied $(3 \times 5) \times 8$.

b. Use Jack's method to find the volume of this right rectangular prism.



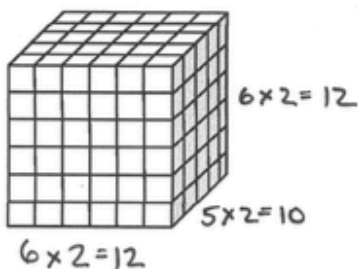
$$3 \times 2 = 6$$

$$6 + 6 + 6 + 6 + 6 = 30$$

The volume of this right rectangular prism is 30ft³.

Fifth Grade Module 5: Mid-Module Assessment Task Key (continued)

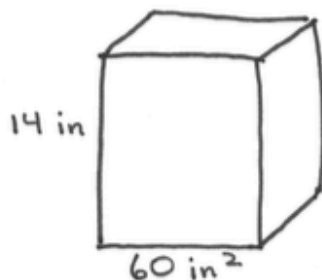
3. If the figure below is made of cubes with 2 cm side lengths, what is its volume? Explain your thinking.



The volume is
1,440 cm³.

$12 \times 12 \times 10 = 144 \times 10 = 1,440$
First I counted the cubes. Since each cube is worth 2 cm each, I doubled the number on each side. Then I could have added the layers, but multiplying is faster.

4. The volume of a rectangular prism is 840 in³. If the area of the base is 60 in², find its height. Draw and label a model to show your thinking.



$$V = 840 \text{ in}^3$$

$$\frac{840}{60} = \frac{84}{6} = 14$$

The height is 14 inches.

5. The following structure is composed of two right rectangular prisms that each measure 12 inches by 10 inches by 5 inches and one right rectangular prism that measures 10 inches by 8 inches by 36 inches. What is the total volume of the structure? Explain your thinking.

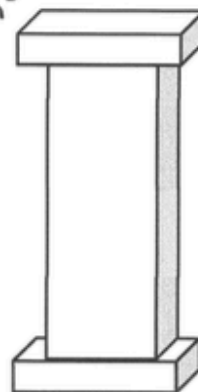
$$12 \text{ in} \times 10 \text{ in} \times 5 \text{ in} = 120 \text{ in}^2 \times 5 = 600 \text{ in}^3$$

$$600 \text{ in}^3 \times 2 = 1,200 \text{ in}^3$$

$$10 \text{ in} \times 8 \text{ in} \times 36 \text{ in} = 360 \text{ in}^2 \times 8 \text{ in} = 2,880 \text{ in}^3$$

$$\begin{array}{r} 360 \\ \times 8 \\ \hline 2,880 \\ 2,880 \\ + 1,200 \\ \hline 4,080 \end{array}$$

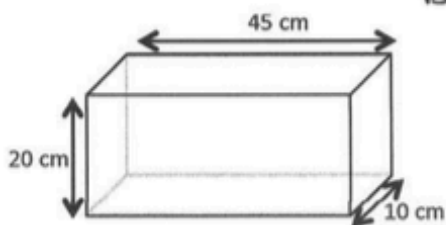
I found the volume of the top piece, then doubled it. I added that to the volume of the middle piece.



The volume of the structure is 4,080 in³.

Fifth Grade Module 5: Mid-Module Assessment Task Key (continued)

6. a. Find the volume of the rectangular fish tank. Explain your thinking.

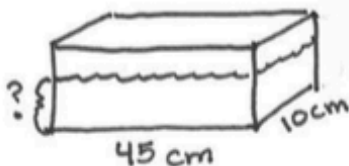


$$45 \text{ cm} \times 20 \text{ cm} \times 10 \text{ cm} = 900 \text{ cm}^2 \times 10 \text{ cm} = 9,000 \text{ cm}^3$$

I multiplied all the sides to get the volume.

The volume of the fish tank is $9,000 \text{ cm}^3$.

- b. If the fish tank is completely filled with water, and then 900 cubic centimeters are poured out, how high will the water be? Give your answer in centimeters, and show your work.



$$\begin{array}{r} 9,000 \text{ cm}^3 \\ - 900 \text{ cm}^3 \\ \hline 8,100 \text{ cm}^3 \end{array}$$

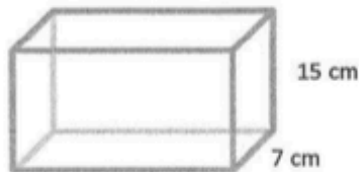
$$\begin{array}{r} 18 \\ 450 \overline{) 8,100} \\ \underline{- 4,500} \\ 3,600 \\ \underline{- 3,600} \\ 0 \end{array}$$

The water is 18 cm high.

7. Juliet wants to know if the chicken broth in this beaker will fit into this rectangular food storage container. Explain how you would figure it out without pouring the contents in. If it will fit, how much more broth could the storage container hold? If it will not fit, how much broth will be left over? (Remember $1 \text{ cm}^3 = 1 \text{ mL}$.)



beaker



storage container

First, I found the volume of the storage container.

$$20 \text{ cm} \times 15 \text{ cm} \times 7 \text{ cm} = 300 \text{ cm}^2 \times 7 \text{ cm} = 2,100 \text{ cm}^3 = 2.1 \text{ L}$$

Since each line on the beaker is 400 mL, the beaker is holding 2.4 L of broth. The broth will not fit in the container. $2.4 \text{ L} - 2.1 \text{ L} = 0.3 \text{ L}$ Juliet will have 0.3 L or 300 mL of broth left over.

Fifth Grade Module 5: End-of-Module Assessment Task Score Sheet

A Progression of Learning

A Progression of Learning is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left to right. The learning goal for each student is to move to the last step, “Evidence of solid reasoning with a correct answer”. These steps are meant to help teachers and students identify and celebrate what the student CAN do now, and what they need to work on next.

Score Key: A Progression of Learning			
Little or no evidence of reasoning with an incorrect answer. (1 Point)	Evidence of some reasoning with an incorrect answer. (2 Points)	Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	Evidence of solid reasoning with a correct answer. (4 Points)

	Module 5 End-of-Module Assessment													
	Domain						Standards							
Question	Number and Operations – Fractions				Measurement and Data		Geometry		5.NF.4b	5.NF.6	5.MD.3	5.MD.5	5.G.3	5.G.4
1	1	2	3	4					X					
2	1	2	3	4					X	X				
3					1	2	3	4			X	X		
4	1	2	3	4					X	X				
5					1	2	3	4				X		
6								1	2	3	4		X	X

Domain Score	Number and Operations – Fractions		Measurement and Data		Geometry	
Total Points						
Level	4	11-12 pts	4	7-8 pts.	4	4 pts.
	3	8-10 pts.	3	5-6 pts.	3	3 pts.
	2	5-7 pts.	2	3-4 pts.	2	2 pts.
	1	3-4 pts.	1	2 pts.	1	1 pts.

Note: For more information about standards assessed in this module, see back of this score sheet.

Notes:

Fifth Grade Module 5: End-of-Module Assessment Task Score Sheet (continued)

End-of-Module Assessment Task (Topics A–D) Clusters and Standards Addressed

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- b.** Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- 5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- a.** A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
- b.** A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- a.** Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- b.** Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
- c.** Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Classify two-dimensional figures into categories based on their properties.

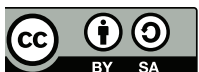
- 5.G.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*
- 5.G.4** Classify two-dimensional figures in a hierarchy based on properties.

Fifth Grade Module 5: End-of-Module Assessment Task Rubric

A Progression of Learning				
Assessment Task Item and Standards Assessed	STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)	STEP 2 Evidence of some reasoning with an incorrect answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
1 5.NF.4b	The student is unable to draw the rectangle and unable to find the area.	The student correctly answers 1-2 of the three parts.	The student correctly answers parts 1 & 2, but does not use appropriate units for part 3.	The student correctly answers 3 of the three parts. (See below.)
	1. Draws the rectangle. 2. Calculates the area as $12\frac{3}{8}$ 3. Labels area with square inches.			
2 5.NF.4b 5.NF.6	The student correctly answers 0-1 of the five parts.	The student correctly answers 2-3 of the five parts.	The student correctly answers 4 of the five parts.	The student correctly answers 5 of the five parts. (See below.)
	a. (1) Draws the yard and (2) labels correctly with the length as $24\frac{1}{2}$ ft and the width as $12\frac{4}{5}$ ft. b. (3) Calculates the area of the yard using (4) appropriate units as $313\frac{6}{10}$ ft ² or $313\frac{3}{5}$ ft ² . c. (5) Finds the cost of the sod to be \$203.84.			
3 5.MD.3 5.MD.5	The student correctly answers 0-1 of the four parts.	The student correctly answers 2 of the four parts.	The student correctly answers 3 of the four parts.	The student correctly answers 4 of the four parts. (See below.)
	(1) Finds volume of container (14,400 cubic cm) (2) Finds volume of water in container (9,000 cubic cm) (3) Finds difference between remaining volume in the container and the amount of water added. (1.1L) (4) Uses words, numbers, and pictures to explain answer.			
4 5.NF.4b 5.NF.6	The student correctly answers 0-1 of the four parts.	The student correctly answers 2 of the four parts.	The student correctly answers 3 of the four parts.	The student correctly answers 4 of the four parts. (See below.)
	1. Accurately partitions the area model in both dimensions. 2. Provides a clear explanation of Jim's error. 3. Calculates the correct area of the rectangle as $8\frac{1}{8}$. 4. Labels area as in ²			

Assessment Recommendations for Eureka Math A Story of Units
Teaching and Learning Department - Bethel School District

A Progression of Learning				
Assessment Task Item and Standards Assessed	STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)	STEP 2 Evidence of some reasoning with an incorrect answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
5 5.MD.5	The student correctly answers 0-1 of the four parts.	The student correctly answers 2 of the four parts.	The student correctly answers 3 of the four parts.	The student correctly answers 4 of the four parts. (See below.)
	(1-2) Calculates the height of both towers (8 inches). (3) Labels heights in inches. (4) Explains that the towers are equal in height.			
6 5.G.3 5.G.4	The student correctly answers 0-6 of the fourteen parts.	The student correctly answers 7-11 of the fourteen parts.	The student correctly answers 12-13 of the fourteen parts.	The student correctly answers 14 of the fourteen parts. (See below.)
	a. (1) True (2) explanation b. (3) True (4) explanation c. (5) False (6) explanation d. (7) True (8) explanation e. (9) False (10) explanation f. (11) False (12) explanation g. (13) False (14) explanation			

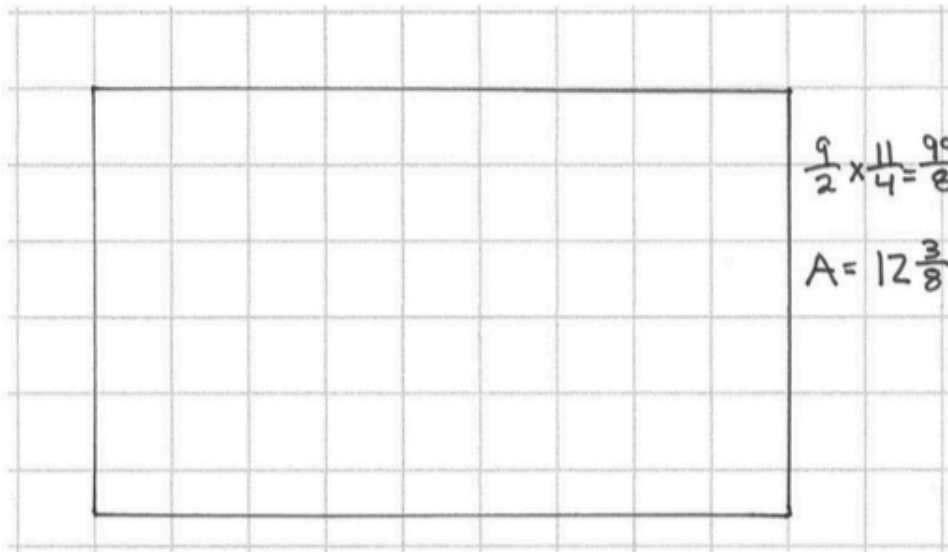


Fifth Grade Module 5: End-of-Module Assessment Task Key

Name Jean

Date _____

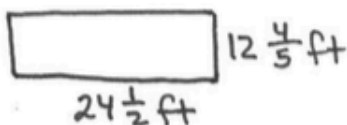
1. Use your ruler to draw a rectangle that measures $4\frac{1}{2}$ by $2\frac{3}{4}$ inches, and find its area.



2. Heather has a rectangular yard. She measures it and finds out it is $24\frac{1}{2}$ feet long by $12\frac{4}{5}$ feet wide.

- a. She wants to know how many square feet of sod she will need to completely cover the yard.

Draw the yard, and label the measurements.



- b. How much sod will Heather need to cover the yard?

$$12\frac{4}{5} \times 24\frac{1}{2} = \frac{64}{5} \times \frac{49}{2} = \frac{3136}{10} = \frac{1568}{5} = 313\frac{3}{5}$$

She'll need $313\frac{3}{5} \text{ ft}^2$ of sod to cover her yard.

- c. If each square foot of sod costs 65 cents, how much will she have to pay to cover her yard?

$$313\frac{3}{5} = 313.6$$

$$\begin{array}{r} 313.6 \\ \times .65 \\ \hline 15680 \\ + 188160 \\ \hline 203840 \end{array}$$

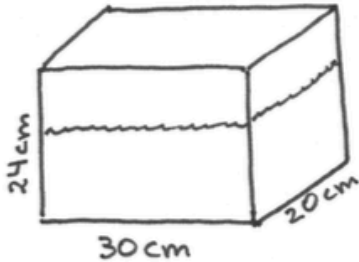
Heather will have to pay \$203.84 to cover her yard.

$$\begin{array}{r} 1568 \\ 2 \overline{) 3136} \\ \underline{-2} \\ 11 \\ \underline{-10} \\ 13 \\ \underline{-12} \\ 16 \\ \underline{-16} \\ 0 \end{array}$$

$$\begin{array}{r} 313\frac{3}{5} \\ 5 \overline{) 1568} \\ \underline{-15} \\ 6 \\ \underline{-5} \\ 18 \\ \underline{-15} \\ 3 \end{array}$$

Fifth Grade Module 5: End-of-Module Assessment Task Key (continued)

3. A rectangular container that has a length of 30 cm, a width of 20 cm, and a height of 24 cm is filled with water to a depth of 15 cm. When an additional 6.5 liters of water is poured into the container, some water overflows. How many liters of water overflow the container? Use words, pictures, and numbers to explain your answer. (Remember $1 \text{ cm}^3 = 1 \text{ mL}$)



$$30 \times 20 \times 24 = 720 \times 20 = 14,400$$

Volume of the container = $14,400 \text{ cm}^3$

$$30 \times 20 \times 15 = 450 \times 20 = 9,000$$

Volume of water $9,000 \text{ cm}^3$

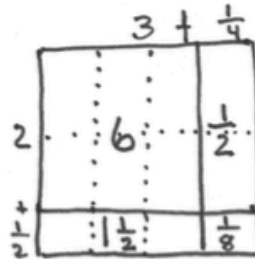
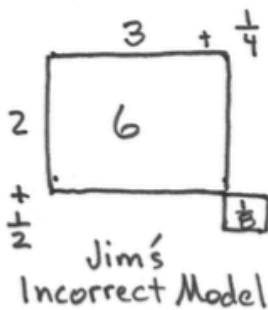
$$14,400 - 9,000 = 5,400$$

Room left in the container = $5,400 \text{ cm}^3$ or 5.4 L

$$6.5 \text{ L} - 5.4 \text{ L} = 1.1 \text{ L}$$

The water overflowed by 1.1 L or $1,100 \text{ cm}^3$.

4. Jim says that a $2\frac{1}{2}$ inch by $3\frac{1}{4}$ inch rectangle has a section that is 2 inches \times 3 inches and a section that is $\frac{1}{2}$ inch \times $\frac{1}{4}$ inches. That means the total area is just the sum of these two smaller areas, or $6\frac{1}{8} \text{ in}^2$. Why is Jim incorrect? Use an area model to explain your thinking. Then, give the correct area of the rectangle.

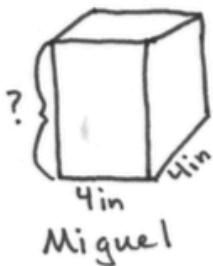


In order to find the area, all sections of the area model must be calculated and added.

$$6 + \frac{1}{2} + 1\frac{1}{2} + \frac{1}{8} = 8\frac{1}{8}$$

The area of the rectangle is $8\frac{1}{8} \text{ in}^2$.

5. Miguel and Jacqui built towers out of craft sticks. Miguel's tower had a 4-inch square base. Jacqui's tower had a 6-inch square base. If Miguel's tower had a volume of 128 cubic inches and Jacqui's had a volume of 288 cubic inches, whose tower was taller? Explain your reasoning.



$$V = 128 \text{ in}^3$$

$$\begin{array}{r} 8 \\ 16 \overline{) 128} \\ \underline{-128} \\ 0 \end{array}$$



$$V = 288 \text{ in}^3$$

$$\begin{array}{r} 8 \\ 36 \overline{) 288} \\ \underline{-288} \\ 0 \end{array}$$

Both towers have the same height of 8 in. I divided the volumes by the bases and got a height of 8 in.

Fifth Grade Module 5: End-of-Module Assessment Task Key (continued)

6. Read the statements. Circle *True* or *False*. Explain your choice for each using words and/or pictures.

- a. All parallelograms are quadrilaterals.

True

False

All parallelograms have 4 straight sides, so all parallelograms are a type of quadrilateral.

- b. All squares are rhombuses.

True

False

All rhombuses have 4 equal sides, and so do all squares. Some rhombuses do not have 4 right angles, so not all rhombuses are squares.

- c. Squares are rhombuses, but not rectangles.

True

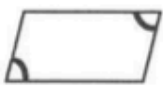
False

All squares are both rhombuses and rectangles. Squares and rhombuses both have 4 equal sides. Squares and rectangles both have 4 right angles.

- d. The opposite angles in a parallelogram have the same measure.

True

False



The opposite sides of parallelograms are parallel and equal in length. The four angles always add up to 360° . Opposite angles are always equal.

- e. Because the angles in a rectangle are 90° , it is not a parallelogram.

True

False

All rectangles are parallelograms because all rectangles have 2 pairs of parallel sides.

- f. The sum of the angle measures of any trapezoid is greater than the sum of the angle measures of any parallelogram.

True

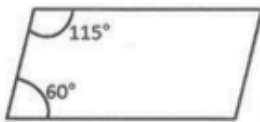
False

The sum of the 4 angles of any quadrilateral, including trapezoids and parallelograms, is always 360° .

- g. The following figure is a parallelogram.

True

False



Opposite angles in a parallelogram are always equal. If you add up these angles ($60^\circ + 60^\circ + 115^\circ + 115^\circ$) the sum is only 350° . Therefore, the opposite angles can't be equal, and this isn't a parallelogram. The angles need to add up to 360° .